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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|------------------------------|-------------|----------------------|------------------------|------------------|
| 10/588,710 | 08/07/2006 | Brad A. Lovett | 60,158-294PUS1 | 4638 |
| 26096 | 7590 | 08/14/2009 | EXAMINER | |
| CARLSON, GASKEY & OLDS, P.C. | | | JACOBSON, MICHELE LYNN | |
| 400 WEST MAPLE ROAD | | | | |
| SUITE 350 | | | ART UNIT | PAPER NUMBER |
| BIRMINGHAM, MI 48009 | | | 1794 | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/588,710 | LOVETT ET AL | |
| | Examiner | Art Unit | |
| | MICHELE JACOBSON | 1794 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 25 June 2009.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1,4-19,21,23-25 and 31-34 is/are pending in the application.
 4a) Of the above claim(s) 14-19,21,23-25 and 34 is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1,4-13 and 31-33 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) 1,4-19,21,23-25 and 31-34 are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 07 August 2006 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/7/06</u> . | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Election/Restrictions

1. The examiner notes that the restriction requirement that was mailed 5/26/09 contained groupings according to applicant's originally filed claims and did not address the currently pending amended claims submitted by applicant on 8/7/06. The examiner apologizes for this inconvenience and has included the corrected restriction requirement below. The examiner is also grateful to applicant's representative, Mr. Koziarz, for permitting an election over the phone to correct the examiner's oversight.

2. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1, 4-13 and 31-33, drawn to a tubing comprising an inner and outer layer of aromatic polyamide.

Group II, claim(s) 14-19 and 34, drawn to a tubing comprising a layer of aromatic polyamide.

Group III, claim(s) 21 and 23-25, drawn to a method of extruding a tubing comprising an inner and outer aromatic polyamide layer.

3. The inventions listed as Groups I-III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The unifying feature between Groups I-III is a tubing comprising an aromatic polyamide layer. Ikemoto et al. U.S. Patent No. 6,619,329 (hereafter referred to as Ikemoto) teaches a hose for a motor

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vehicle comprising a polyamide layer, such as aromatic polyamide. (Col. 1, lines 6-11, Col. 4, lines 5-13) Therefore, the unifying feature between groups I-IV is known in the art and as such, there is no corresponding special technical feature between groups I-IV.

4. During a telephone conversation with Mr. Koziarz on 8/3/09 a provisional election was made to prosecute the invention of group I, claim 1, 4-13 and 31-33. Affirmation of this election must be made by applicant in replying to this Office action. Claims 14-19, 21, 23-25 and 34 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

6. The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and the product claims are subsequently found allowable, withdrawn process claims that depend from or otherwise require all the limitations of the allowable product claim will be considered for rejoinder. All claims directed to a nonelected process invention must require all the limitations of an allowable product claim for that process invention to be rejoined.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the

requirements of 35 U.S.C. 101, 102, 103 and 112. Until all claims to the elected product are found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowable product claim will not be rejoined. See MPEP § 821.04(b). Additionally, in order to retain the right to rejoinder in accordance with the above policy, applicant is advised that the process claims should be amended during prosecution to require the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.** Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 31 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 31 recites "The vehicle tubing as recited in claim 3". However, claim 3 has been cancelled. Since claim 31 references intermediate thermoplastic layers, claim 31 appears to have been intended to depend from claim 5

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which also recites an intermediate thermoplastic layer and for the purpose of examination will be interpreted as such. Appropriate clarification is required.

Claim Objections

9. Claim 10 is objected to because of the following informalities: Claim 10 redundantly recites the term “a heat stabilizing agent”. Appropriate correction is required.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1, 4-8, 10-12, 31 and 33 rejected under 35 U.S.C. 102(b) as being anticipated by Jadamus et al. U.S. Patent No. 6,428,866 (hereafter referred to as Jadamus).

12. Jadamus teaches a multilayer pipe for fuel transport applications comprising an outer layer of a thermoplastic composition and an inner layer of an electrically conductive thermoplastic composition wherein the electrically conductive composition contains graphite fibrils. (Col. 1, line 54-Col. 2, line 2) The inner and outer layers are

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recited to comprise polyamides such as copolyamides comprising isophthalic and terephthalic acid residues and mixed aliphatic/aromatic polycondensate polyamides.

(Col. 2, lines 20-26, 41-44, 50-51) The polyamides may be impact modified. (Col. 3, line 11) The ratio of the thickness of the inner layer to the thickness of the outer layer is recited to be between 1:5 to 1:100 (inner layer = 17% - 1% of the total thickness) The graphite fibrils render the surface resistance of the inner layer to preferably be less than $10^5 \Omega/\text{sq}$. (Col. 5, lines 29-31)

13. An optional barrier layer between the inner and outer layers comprising a thermoplastic molding composition such as polyester, polyvinylidene fluoride, ETFE, polyolefin or EVOH may also be present. (Col. 5, lines 1-6)

14. Jadamus clearly anticipates the two layer vehicle tubing comprising inner and outer layers comprising aromatic polyamide and an impact modifier with the inner layer having a thickness between 50%-10% of the total thickness and being electrically conductive by means of carbon fibers with a surface resistivity between 10^2 - $10^7 \Omega/\text{sq}$ claimed in claims 1, 4, 6-8, 10-12 and 33. Since Jadamus clearly recites terephthalic and isophthalic acids as coacids for the preparation of copolyamides these aromatic groups would have amide groups attached as claimed in claims 7 and 8. Jadamus clearly anticipates the embodiment with an additional barrier layer comprising the same materials as claimed in claims 5 and 31.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 9, 13 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jadamus et al. U.S. Patent No. 6,428,866 (hereafter referred to as Jadamus).

17. Jadamus teaches what has been recited above but is silent regarding the percentage of amide groups attached to aromatic rings, corrugation of the fuel tube and the presence of a heat stabilizer.

18. Regarding claim 9: It would have been obvious to one having ordinary skill in the art at the time the invention was made to have optimized the amount of aromatic polyamide in the compositions for the fuel hose recited by Jadamus depending on the properties of the final tubing that were desired. Aromatic polyamides are well known in the fuel hose art to provide excellent barrier properties and strength and it would have been obvious to one of ordinary skill to vary the result effective variable of the amount of aromatic polyamide present in order to optimize these properties. This obvious optimization would have produced the invention claimed in claim 9.

19. Regarding claim 13: The examiner takes official notice that it is universally known in the fuel hose art to provide corrugation to the exterior of hoses in order to increase their flexibility. It would have been obvious to one having ordinary skill in the

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art at the time the invention was made to have corrugated the exterior surface of the hose disclosed by Jadamus to increase the flexibility of the hose. This obvious modification would have produced the invention claimed in claim 13.

20. Regarding claim 32: The examiner takes official notice that it is universally known in the fuel hose art to provide heat stabilizers to polymers that will be employed in applications where they are exposed to high heat. Since fuel hoses are used in engines, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have added a heat stabilizer to the aromatic polyamide recited by Jadamus in order to improve the stability of the hose under the high temperature conditions it would be employed in. This obvious improvement to the invention of Jadamus would have produced the invention as claimed in claim 32.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHELE JACOBSON whose telephone number is (571)272-8905. The examiner can normally be reached on Monday-Thursday 8:30 AM-7 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571)272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michele L. Jacobson
Examiner
Art Unit 1794

/M. J./

/Rena L. Dye/
Supervisory Patent Examiner, Art Unit 1794